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**Food Inflation: A comparative study into the main
causes and implications for Africa**

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**Food Inflation:
A comparative study into the main causes and
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Fetsum Berhane

March, 2011

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Abstract

It is now widely acknowledged that rising food price has been a major factor in sparking the turmoil in Africa and the Middle East in 2008 and recently. According to the UN, the global price of food hit a new all-time high earlier this year, and the agency is expecting the price of food to continue to go up throughout the rest of this year.

According to the Food and Agriculture Organization (FAO), the global crisis pushed an additional 100 million people into hunger in 2009; the World Bank estimates that 50 million additional people were living under \$1.25 a day in 2009 as a result of the crisis. The crisis also negatively affected government budgets and social assistance programs.

A resurgence of many of the major factors that drove prices up two years ago—the diversion of food commodities into bio-fuels, rising energy prices, and adverse exchange rate shifts—on top of bad weather conditions could lead to another spike in food prices in the near-term.

The global food crisis is not over. International food prices remain high despite their collapse from their 2008 peaks. Aggravating the food security problem of the poor, staple food prices in developing countries have actually continued to increase in recent months. Many of the structural factors that drove prices up during the food crisis are still at play and could lead to another spike in the near future.

The continued increase in the use of corn for bio-fuels production and the likelihood of higher oil prices with recovery point to further price increases; exchange rate volatility adds to the risks. Advanced countries need to review their policies toward bio-fuel production, which is proving disastrous for the poor.

Key words: food price, African agriculture, bio fuel, food security, agricultural productivity, green revolution, Agricultural price subsidies

Chapter One

1.1. Introduction

Over the last five decades, the world's agricultural population has increased from 1.5 billion to 2.5 billion, currently constituting 40 per cent of the world's population. Africa showed the highest relative increase, from 222 million to 460 million. In 2005, some 54 per cent of the population in African countries was involved in agriculturally-related activities. Agriculture remains the main source of employment in Africa and in most of the rest of the developing world; it generates over 50 per cent of the jobs and represents on average 15 per cent of the gross domestic product (GDP), 30 per cent of the GDP in sub-Saharan Africa. In those regions, agriculture consists of small, family-owned plots, many of which have been cultivated for generations (FAO, 2011).

According to the same source there are now one billion hungry people in the world and of those many are in Africa. The 2006-2008 global food crisis and currently rebounding price of food items largely contribute for the situation. After increasing sharply from 2006 to 2009, owing to high food prices and the global economic crisis, the number of undernourished people in the world is estimated to have declined in 2010 as the global economy recovers (Figure 1). But the number of undernourished people remains unacceptably high – higher than it was before the recent crises, higher than it was 40 years ago, and higher than the level that existed when the hunger reduction target was agreed at the World Food Summit in 1996. Based on the latest available data, the total number of undernourished people in the world is estimated to have reached 1 023 million in 2009 and is expected to decline by 9.6 percent to 925 million in 2010. Developing countries account for 98 percent of the world's undernourished people and have a prevalence of undernourishment of 16 percent – down from 18 percent in 2009 but still well above the target set by the Millennium Development Goal (MDG) 1.

This is contrary to the expectation of global institutions that predicted a continuous decline of the number of hungry for various reasons ranging from a global decline in population growth to increase in food production. This unexpected phenomenon has sparked debate among scholars

about the causes of the food inflation. Some scholars argue that world population growth rates have dropped dramatically since the 1980's and grain availability has continued to outpace population growth. However, despite production gains made in the last decade world food demand outpaces any production increase. They cite the decline in food prices after the global financial crisis as evidence that population increase is not the main reason since basic food demand is not elastic to change in price.

Contrary to this argument, Joachim von Braun of the IFPRI argues that total food production increase only about 1-2% per year while world population increases approximately at 4% a year. Of course the total rate of increase in world population is declining but inertia means the total number will go on rising until 2050, reaching 9 billion before it starts to go down. Since population increase is a gradual process it is unlikely to be a cause for sudden food price inflation. Then what is? A gradual change in diet among newly prosperous populations in Asia, declining world food stock piles, trade liberalization, increase in oil prices are some of the reasons suggested by scholars. Africa is at the forefront of the crisis. The 2006-2008 global food crises have caused riots in more than 60 countries. The prices are now once again rising posing a replay.

According to (FAO, 2011) the amount of food available in developing countries has to double by 2050, equivalent to a 70% rise in world food production. This is achievable if we consider the current cereal yield in Africa is around 1 tonne per hectare while it is 7-9 tonne per hectare in Europe and Asia and that it seems easier to get an extra 1 tonne per hectare from African yields. However, a look at the recent track record suggests otherwise. Almost all increase in cereal output in 2008 came from developed countries. Harvest increased by 11%. While increase in developing countries was a mere 1%, if China, Brazil and India are excluded, output actually fell. That is why Africa now stands at a crossroad. It can undergo a "green revolution" and triple its food production to Asian levels to lift its agrarian population out of poverty. This phenomenon can be an opportunity for long exploited (due to low prices) African farmer. The alternative is to continue with current policies and performance to end in chaos and an end of the African growth surge of the last decade.

1.2. Background: The 2006-2009 Global Food Crisis

From 1996 until 2000 regional inflation, weighted by GDP, declined from 11.5 percent to 2.5 percent. Since 2000, however, this trend was reversed. A small increase in 2001 was followed by increases in every year until 2008 when inflation jumped into double digits and was again a priority policy issue. The global financial crisis has at least temporarily brought down inflation and reduced the urgency of addressing this issue, but the inflation has come back as the world recovers. Internationally traded food commodities prices have increased sharply since 2002 and especially since late-2006, and prices of major staples, such as grains and oilseeds,³ have doubled in just the past two years. Rising prices have caused food riots in several countries and led to policy actions such as the banning of grain and other food exports by a number of countries and tariff reductions on imported foods in others. The policy actions reflect the concern of governments about the impact of food price increases on the poor in developing countries who, on average, spend half of their household incomes on food.

The IMF's index of internationally traded food commodities prices⁵ increased 130 percent from January 2002 to June 2008 and 56 percent from January 2007 to June 2008 (IMF, 2008) (Fig 1).

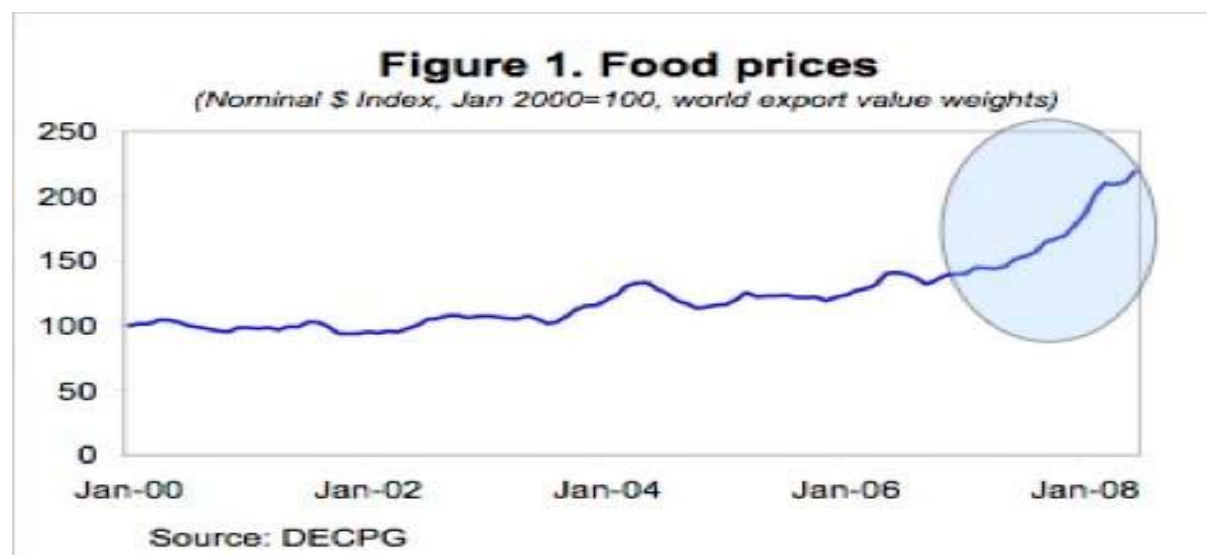


Fig 1: index of internationally traded food commodities

The years 2007–2008 saw dramatic increases in world food prices, creating a global crisis and causing political and economic instability and social unrest in both poor and developed nations. Systemic causes for the worldwide increases in food prices continue to be the subject of debate.

Between 2006 and 2008 average world prices for rice rose by 217%, wheat by 136%, corn by 125% and soybeans by 107%. In late April 2008 rice prices hit 24 cents (U.S.) per U.S. pound, more than doubling the price in just seven months. The price rises affected parts of Africa particularly severely with Burkina Faso, Cameroon, Senegal, Mauritania, Côte d'Ivoire, Egypt and Morocco seeing protests and riots in late 2007 and early 2008 over the unavailability of basic food staples.

The price rises defied decades of volatile but fundamentally declining commodity prices, a trend only occasionally interrupted by short-lived, supply-related, price spikes. Initially, most developing country governments were not too alarmed. Many of them had pursued policies of trade liberalization and were party to trade agreements that locked other countries into open trade as well. They believed that global supply would be adequate to meet demand, so that if they were to face a domestic shortfall they could easily afford the food they needed on world markets. They were wrong. By late 2007, grain prices were breaking recent records and a number of governments started to panic. Food riots broke out. The media started to talk about food on a daily basis.

One of the principal immediate causes of food price inflation on world markets from 2004/2005 was the rapid increase in the production and use of biofuels (often called agrofuels). The expansion of biofuels production created significant new demand for a number of agricultural commodities, which in turn had important knock-on effects on the prices of other commodities. On the supply side, persistent drought and other weather-related problems in some of the major producers for world markets, especially Australia (the world's third largest supplier of wheat), shrank supplies just as demand was taking off. But neither of these factors alone was enough to trigger the crisis. Therefore, it is agreed by many scholars that a key driver of the food commodities price increases since 2004 was the shift in demand for industrial use due to the increase in the production of biofuels in developed countries. In December 2008, the global economic slowdown, decreasing oil prices, and speculation of decreased demand for commodities worldwide brought about sharp decreases in the price of staple crops from their earlier highs. Corn prices on the Chicago Board of Trade dropped from US \$7.99 per bushel in June to US \$3.74 per bushel in mid-December; wheat and rice prices experienced similar

decreases. The Food and Agriculture Organization (FAO), however, warned against "a false sense of security", noting that the credit crisis could cause farmers to reduce plantings. FAO has convened a World Summit on Food Security in November 2008, noting that food prices remain high in developing countries and that the global food security situation has worsened.

Chapter Two: The Main Causes of Food Inflation and The Rebound of Price of food

2.1 The Main Causes of Food Inflation

The 2007–08 food price crises had both demand and supply driven causes. Rising energy prices (mid-2008), subsidized biofuel production, income and population growth, and urbanization are among the main forces contributing to increasing demand. On the supply side, land and water constraints, underinvestment in rural infra-structure and in agricultural innovation and access to inputs, and weather disruptions are impairing productivity growth and the needed production response. Between 2000 and 2007, cereal demand exceeded cereal production, causing cereal stocks to decline. Demand for agricultural commodities for food, feed, and fuel use is likely to continue to increase. Furthermore, climate change risks and rising energy demand could accelerate food prices further in the future.

In addition to the supply and demand basics, there is significant evidence that the crisis was intensified by the malfunctioning of world grain markets and by the protectionist reaction of many countries. These reactions began as consequences, not causes, of the crisis, but they worsened it and, in turn, led to even higher prices and unpredictability, with adverse costs for the poor and for long-term incentives for agricultural production. Because these market failures hamper the free flow of food to where it is most needed and the free flow of price indicators to farmers, they imposed massive efficiency losses on the international food system, striking the poorest countries hardest.

As a result, changes in supply and demand fundamentals cannot fully explain the price increase that happened during the first half of 2008. There are two major explanations for this price spike. First, ad hoc trade policy interventions—such as export bans, high export tariffs, and high import subsidies—were partly initiated by the price crisis and worsened its symptoms. As of April 2008, fifteen countries*, including major producers, had imposed export restrictions on agricultural supplies, thus contracting the global market.⁷ Policy reactions such as export bans or high export tariffs may lessen the risks of food shortages in the short-term for the particular country, but they are likely to backfire by making the international market smaller and more volatile. At the country level, price controls diminish farmers' motivations to produce more food and divert resources away from those who need them most. Export restrictions also have harmful effects on import-dependent trading partners. International Food Policy Research Institute (IFPRI) simulations with the MIRAGE global trade model show that these trade restrictions can explain as much as 30 percent of the increase in prices in the first half of 2008.

The second explanation is that excessive speculation in the commodity futures market could, in principle, push up futures prices and—through arbitrage opportunities—spot prices above levels justified by supply and demand fundamentals. The supposed impact of speculation is sometimes confused, however, with the impact of hedging, which reflects consumers' candid concerns about future fundamentals and a desire to hedge against risks.

The performance of agriculture over the past twenty five years has been viewed as a success story. Between 1980 and 2004, output grew at an average of 2 percent per year and prices fell at an average of 1.6 percent. Analysts at IFPRI (International Food Policy Research Institute) and the FAO predicted that food prices would rise by 0.26 percent per year until 2030 and 0.82 percent per year from 2030 to 2050. However, in the first years of this decade, from January 2002 to July 2008, the price index of internationally traded food commodities prices increased by about 20 percent per year or 100 times more than the predictions.

* The countries are Argentina, Bangladesh, Bolivia, Cambodia, China, Egypt, Ethiopia, India, Kazakhstan, Malaysia, Pakistan, Russia, Tanzania, Vietnam, and Zambia.

Trostle (2008) provides a timeline of events, which distinguishes between supply and demand-side factors, and also distinguishes between long-term factors (such as strong growth in demand and slowing agricultural production), medium-term factors (for example, dollar devaluation, rising oil prices, biofuels production, and the build-up of foreign exchange reserves); and short-term factors (such as adverse weather and various trade shocks).

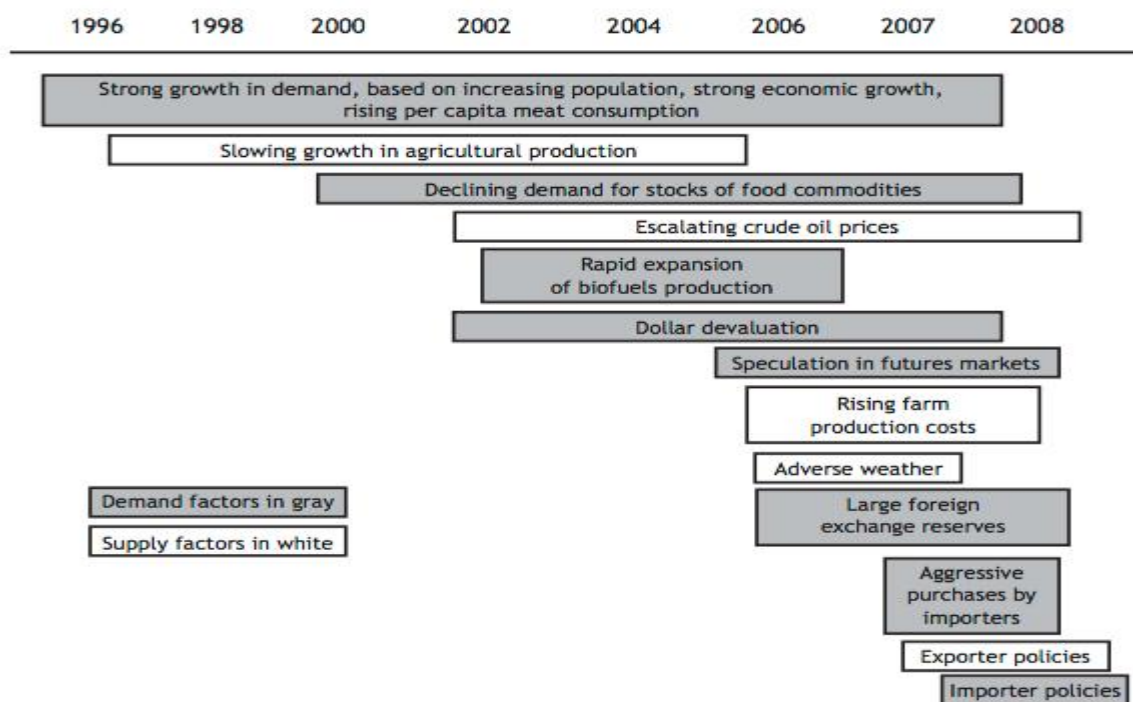
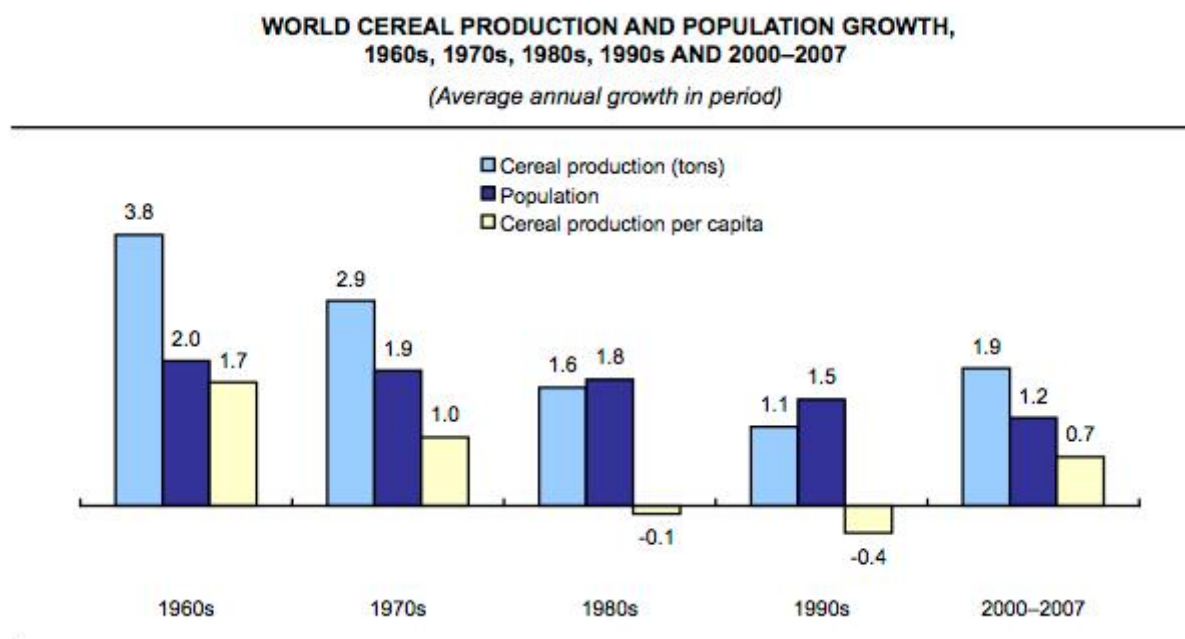


Fig 2: Timeline of events contributing to the food crisis

2.1.1 Declining agricultural productivity and declining world food stockpiles

Several studies have cited declining productivity growth and declining stocks as the main causes of the supply–demand imbalance (see Abbott, Hurt, and Tyner 2008). In many of these documents, decelerating productivity growth is mainly credited to lower rates of investment in agricultural research. Diminishing yields are used as evidence for reduced growth. The World Bank’s (2008c) World Development Report that demonstrates declining growth rates in yields of rice, maize, and wheat. However, a global supply–demand imbalance relates to total production per-capita and its effects (if any) on international trade; yields and other productivity measures are only determining factor of production.

The most relevant measure is production per-capita, and global cereal production per capita was about 6 percent lower in the 2000s than it was in the 1980s. In other words, cereal production did not keep up with population growth. Although yield growth slowed in Asia, the slowdown came from unsustainably high rates in the 1980s that followed the Green Revolution. Poor performance in Australia is also not much of a long-term explanation, even though it could be claimed that climate change and unsustainable farming systems are affecting long-term growth.



Source: Calculations based on FAO, FAOSTAT online, extracted 27 February 2009.

Note: Cereal production in quantities; growth rate is based on log estimate.

Fig 3: World cereal production and population growth

Africa's experience is more appropriate, as its population grew rapidly during this period, so Africa's slow growth remains a sensible explanation of the total decline in per capita agricultural production. But if one excludes Africa's population and cereal production from the global calculations, the –6 percent drops in global cereal production per capita rises to just –4.75 percent. So Africa's poor performance only explains about one-quarter of the global decline.

Other causes could include land degradation, the growing exploitation of marginal lands, and some adverse consequences of economic liberalization, which had negative effects on both input and output markets (Kherallah et al. 2002). In any event, the remaining three-quarters of the decline in global food production is explained by poor performance in Europe (Figure 2.8),

especially the former USSR and several Eastern European countries, which together account for almost all the decline in European cereal production during 1985–2006 (Figure 2.9). Looking at the inputs, land allocated to cereals in Europe declined by 30 percent during 1985–2006, the population working in agriculture fell by 50 percent, farming land equipped for irrigation declined by 26 percent, and fertilizer use declined by 62 percent.

But international prices are chiefly determined by trade, so for the decline in cereal production from East European and former Soviet areas to result in a rise in global prices, we need net exports from these countries to have also declined. However, USDA trade estimates suggest that net exports from this region really increased. Indeed, it is other regions that experienced a decline in net cereal exports over the 1990s and 2000s: North America, South America, Sub-Saharan Africa, and the MENA region. The data also confirm that South Asia and East Asia (including India and China, respectively) are basically self-reliant in cereals. Thus we find no considerable evidence that links a productivity decline to increased pressure in global cereal markets, except perhaps in Sub-Saharan Africa.

Stocks are perhaps the most direct indicator of security for both food self-sufficient nations and major food importers who monitor the stocks of their major suppliers. For such produces as rice, which is controlled by consumers who depend on rice as their staple food, demand is highly inelastic. Stocks indeed seem to be very much relevant to the recent crisis, if only because there has been much more action in the movements of stocks for major staples than in production trends. Actually, stocks have declined noticeably in recent years. Figure 2.11 presents a highly aggregated picture of trends in the global stocks of wheat, maize, and rice relative to the global consumption of each staple, along with the average real international dollar price of all three staples. Agricultural economists emphasize that when stocks are high, prices are usually low and stable. The facts support the conclusion that stock declines present a potentially powerful explanation for the price increases, because stocks declined across all three major staples, and these declines occurred well before the current crisis.

China and India may have had an indirect impact on food prices by means of exhaustion of stocks. Mostly because of augmented demand for meat, grain consumption has grown rapidly in

China from 1991 to the present, and it has often outstripped production growth. For example, maize consumption in China rose by 88 percent, but production increased by only 55 percent. Because China hardly imports any maize (it is one of the main net exporters of maize), most of this extra demand was fulfilled through the depletion of stocks.

Of course, China may have contributed in some small way to the crisis through the exhaustion of stocks, but this seems objectively unlikely. For one thing, China is not a major exporter of maize, and China's stock levels were extremely high prior to the recent surge and—at 22 percent of consumption—are still strongly above optimal levels of 17–18 percent. And as for other cereals, China has long held excessively big stocks of wheat and rice. These stocks have declined fairly in recent years, but relative to current consumption they are still extremely high. Indeed, Slayton and Timmer (2008) have suggested that China could largely solve the rice-price problem simply by freeing these stocks. So if China's declining levels of stocks have had an influence on prices, it may be through some indirect effects on market psychology. But because China is not a major exporter of these commodities and appears unlikely to become a major importer any time soon, such a strong sensitivity to Chinese stock estimates among non-Chinese markets would seem irrational.

As for Indian stocks of major cereals, these have been rather low in recent years, and agricultural output growth in India has been unpredictable, but slow on average. However, India is not a key importer of cereals. In fact, it is normally the world's second largest rice exporter and is also a reasonably large exporter of wheat. However, a poor wheat harvest in 2006/07 led to pressure on India's wheat stocks and India's Public Distribution Scheme, which keeps stocks of both wheat and rice (Gulati and Dutta 2009). In 2006/07, government stocks of wheat fell short of buffer-stock standards and about 6 million metric tons of wheat was imported. And though rice was in surplus and India exported more than 4.5 million tons of rice that year, the fear of a food shortage influenced policymakers, who confronted forthcoming national elections. Hence India's decision to ban exports was not the outcome of rising economic growth or the end of India's self-reliance in grain production but rather the interaction of bad weather, government policies, and national politics.

2.1.2 Increasing use of bio-fuel by developed nations

Once oil prices go beyond US\$60 a barrel, biofuels become more competitive, and grains may be diverted to biofuel production (Schmidhuber 2006), especially if high oil prices are estimated to persist. An expected 100 million tons of grain per year are being redirected from food to fuel. Total worldwide grain production for 2007 was just over 2000 million tonnes. As farmers allocated greater parts of their crops to fuel production than in previous years, land and resources available for food production were reduced correspondingly. This has resulted in less food available for human consumption, especially in developing and least developed countries, where a family's daily budget for food purchases are extremely limited.

According to World Bank, Fears over oil prices, energy security and climate change have provoked governments to take a more pre-emptive stance towards encouraging production and use of bio-fuels. This has led to increased demand for bio-fuel raw materials, such as wheat, soy, maize and palm oil, and increased competition for cropland. Almost all of the increase in international maize production from 2004 to 2007 (when grain prices rose sharply) went for bio-fuels production in the U.S., while existing stocks were exhausted by an increase in global consumption for other uses. Other developments, such as droughts in Australia and poor crops in the E.U. and Ukraine in 2006 and 2007, were largely offset by good crops and increased exports in other countries and would not, on their own, have had a substantial impact on prices. Only a relatively small share of the increase in food production prices (around 15%) is due directly to higher energy and fertilizer costs.⁶

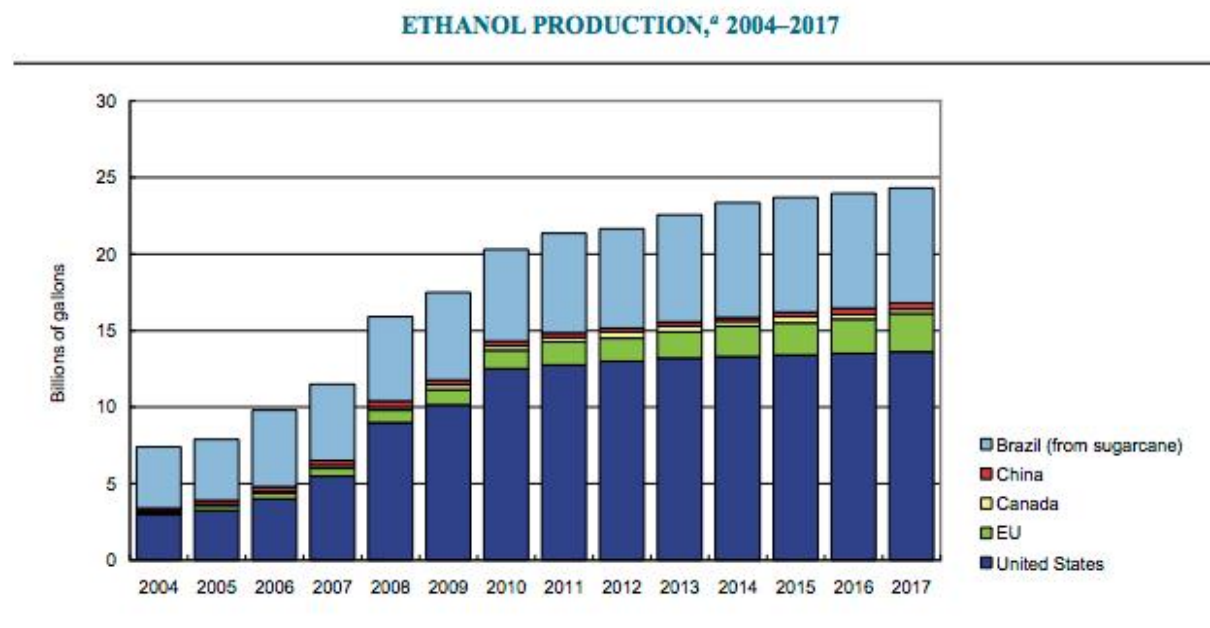
The contribution of the expansion of bio-fuels to witnessed price increases is quantitatively significant. Collins (2008) estimated that around 60 percent of the increase in maize prices from 2006 to 2008 may have been due to the increase in maize used in ethanol.⁷ Mitchell (2008) concludes that 70-75 percent increase in food commodities prices was due to bio-fuels and causes such as low grain stocks, large land use shifts, speculative activity and export bans.⁸ Using a general equilibrium model, Rosegrant, et al. (2008) estimated the effect of the speeding up in bio-fuel production on weighted cereal prices from 2000 to 2007 to be 30 percent in real terms. The United States Department of Agriculture has also acknowledged that the “increase in the

United States ethanol production over the past 5 years and the related significant changes in the structure of the United States commodity market might have had a more pronounced impact on the world's supply and demand balance for total coarse grains" (Trostle, 2008).

A World Bank policy research working paper released in July 2008 says that bio-fuels have raised food prices between 70 to 75 percent. The study found that higher oil prices and a weak dollar explain 25–30% of total price rise. The "month-by-month" five year analysis disputes that increases in global grain consumption and droughts were liable for price increases, reporting that this had had only a minimal effect and instead claims that the EU and US drive for bio-fuels has had by far the main effect on food supply and prices. The paper concludes that increased production of bio-fuels in the US and EU were supported by subsidies and tariffs on imports, and considers that without these policies, price increases would have been smaller.⁹ The main reasons mentioned are as follows:

The use of maize for ethanol grew especially rapidly from 2004 to 2007, and ethanol production used 70 percent of the increase in global maize production. The United States is the largest producer of ethanol from maize and is expected to use about 81 million tons for ethanol in the 2007/08 crop year (USDA 2008a). The United States accounts for about one-third of global maize production and two-thirds of global exports, so impacts on U.S. production easily affect international prices (Mitchell 2008). European biofuel production is concentrated on biodiesels and uses about 7 percent of global vegetable oil supplies (amounting to about one-third of the increase in vegetable oil consumption from 2004 to 2007).

Biofuel production in other parts of the world is either relatively small or uses different crops (for example, sugarcane in Brazil), which have not experienced price surges. Biofuels constitute a major new source of demand in maize and vegetable oil markets, so biofuels are an especially strong candidate to explain price rises in these markets. But the knock-on effects for other foods are also significant. In the United States, rapid expansion of maize area by 23 percent in 2007 resulted in a 16 percent decline in soybean area, which reduced soybean production and contributed to the 75 percent rise in soybean prices from April 2007 to April 2008 (Mitchell 2008). In Europe other oilseeds displaced wheat for the same reason.



Source: Trostel, 2008: 15.

^a Mostly from grain-feed stocks, except for Brazil.

Fig 4: Ethanol production 2004 – 2017

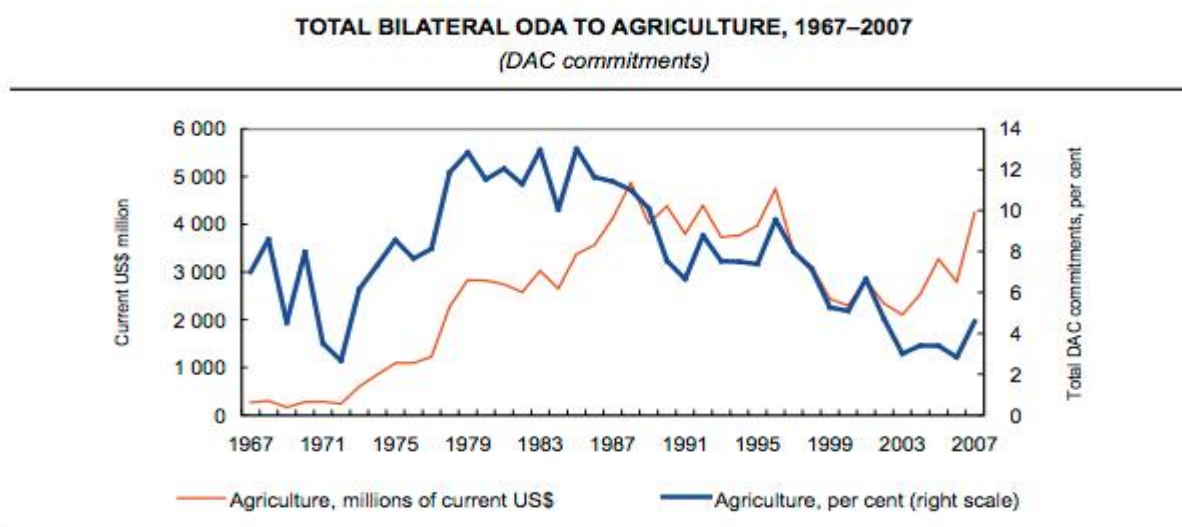
2.1.3 Climate change impact resulting in crop shortfalls from natural disasters

Weather-and climate-related incidents have caused disruptions in crop production. Perhaps the most significant is the extended drought in Australia, in particular the fertile Murray-Darling Basin, which produces large amounts of wheat and rice. The drought has caused the annual rice harvest to fall by as much as 98% from pre-drought levels. Australia is historically the second-largest exporter of wheat after the United States, producing up to 25 million tons in a good year, the vast majority for export. However, the 2006 harvest was 9.8 million.

In Africa, stem rust reappeared in 1998 in Uganda (and possibly earlier in Kenya) with the particularly virulent UG 99 fungus. Unlike other rusts, which only partially affect crop yields, UG 99 can bring 100% crop loss. Up to 80% yield losses were recently recorded in Kenya. These countries in North Africa and Middle East consume over 150% of their own wheat production the failure of this staple crop thus adds a major burden on them.

2.1.4 Agricultural price subsidies by developed nations and the decline of ODA to Agriculture

The global food crisis has renewed calls for removal of distorting agricultural subsidies in developed countries. Support to farmers in OECD countries totals 280 billion USD annually, which compares to official development assistance of just 80 billion USD in 2004, and farm support distorts food prices leading to higher global food prices, according to OECD estimates.



Source: Calculations based on OECD, *International Development Statistics* online, extracted 2 March 2009.

Fig 5: Total bilateral ODA to agriculture

Agriculture's share in official development assistance (ODA) declined sharply over the past two decades, from a high of about 18 per cent in 1979 to 3.5 per cent in 2004 (see figure). It also declined in absolute terms, from about \$8 billion in 1984 to \$3.4 billion in 2004. The bigger decline was from the multilateral financial institutions, especially the World Bank (World Bank, 2008: 41).

2.1.5 Trade liberalization induced import dependency

In opening developing countries to developed world food imports subsidized by Western governments, developing nations have become dependent upon food imports that are cheaper than what local small holders agriculture produces, even in the poorest regions of the world.

Although China's participation in oil and food markets has generally been steady, one agricultural commodity for which China's demand is characterized by a strong import surge is soybeans. In the mid-1990s China appears to have made a conscious decision to move away from domestic soybean production, which was relatively uncompetitive, and to instead rely on exports from North and South America.

From a position of self-reliance in the early 1990s and before, Chinese imports of raw soybeans gradually rose to more than 50 percent of global imports, while soybean oil imports have generally risen but fluctuated between 10 to 30 percent of global imports. However, the data also shows that this increase in demand has been accommodated by increased soybean production (mainly through area expansion) by Argentina, Brazil, and the United States.

This trend has added to U.S. farmers' shifting large amounts of land out of wheat, maize, and other coarse grains into soybeans. USDA data suggest that soybean production area increased by more than 11 million hectares during this period. By using average yields for other crops, simple calculations suggest that non-soybean grain production in the United States might be 3 percent higher today than would have been the case had this switch not happened. In Brazil, soybean exports were largely powered by increase of total agricultural area, such that the impact on production of other crops was not strong.

It seems likely that China has had some modest influence on shrinking coarse-grain production in the United States, but this increased demand was spread out over many years and seems to have been adequately accommodated by broad production growth amid the three major exporters. However, one factor to consider is interaction effects. A possible hypothesis is that rising soybean demand from China from 1995 onward reduced a great deal of the slack in U.S. soybean and maize markets (the two compete for land) such that when the biofuels surge happened, the competition for land between maize and soybeans became much tighter.

2.1.6 Diversion of food commodities into high input food

Many studies credited rising food prices to strong economic growth, specifically the rapid growth in China and India. This explanation appeals due to the two countries have a combined population greater than 2 billion people, many experiencing rapid income growth, have massive potential to augment international demand for food and other resources. Many observers have referred to shifting consumption patterns in China and India, particularly the rapid growth in meat and vegetable consumption since one kilogram of beef requires seven kilograms of feed grain.

These reports, hence, conclude that usage in industrial, feed, and input intensive foods, not population growth among poor consumers of simple grains, has contributed to the price increases. Although the bulk of the population in Asia remains rural and poor, the growth of the middle class in the region has been dramatic. For comparison, in 1990, the middle class grew by 9.7 percent in India and 8.6 percent in China, but by 2007 the growth rate was nearly 30 percent and 70 percent respectively. The corresponding increase in Asian affluence also brought with it a change in life style and eating habits, particularly a demand for greater variety, leading to increased competition with western nations for already strained agricultural resources. This demand aggravates dramatic increases in commodity prices such as oil.

The Asian-diet hypothesis is not corroborated by existing data. Even-though diets in countries like China and India are changing, it is not at all obvious that these countries are becoming more dependent on cereal imports. For example, cereal import trends around the world indicate that Spain and Mexico stand out as the two countries that have most increased their cereal imports in the 2000s. No Asian country figures in the top 10 of that list, and China actually imported fewer cereals in the 2000s than in the 1990s (though the composition changed). Indonesia has also been a greater importer of cereals, but has actually decreased its cereal imports in recent years (Headey 2010). So even though it is true that Asian countries have indeed experienced various increases in their consumption of fruits and some meats, this has not turned into greater cereal bills.

2.1.7 Rising oil prices

Oil can affect food prices through the supply-side costs of agricultural production. Oil and oil-related costs constitute a substantial component of the production of most commodities, so rising oil prices provide a strong explanation of commodity-price escalation across a wide range of food and nonfood commodities. Moreover, unlike non commodity sectors, agriculture is more reliant on fuel-related inputs than on other types of energy.

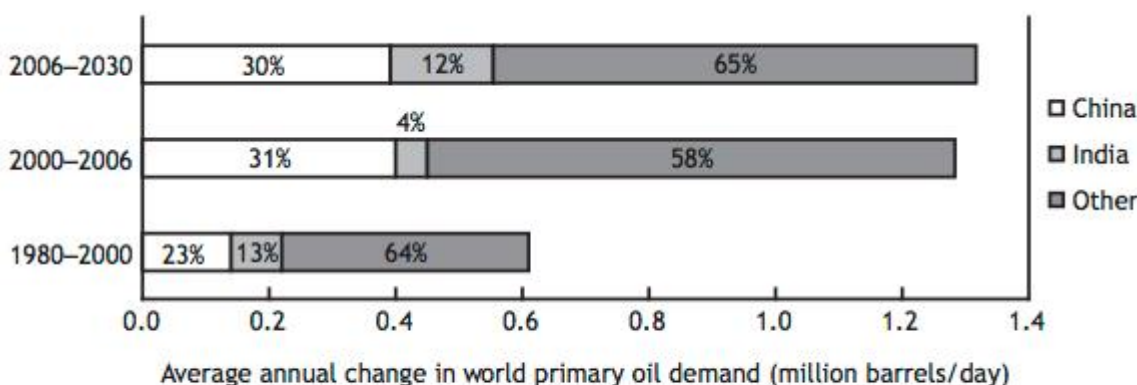
Agriculture is second only to transport in the oil intensity of its energy usage, suggesting marginal costs in agricultural production could be quite sensitive to oil prices. And to rising fuel costs we also need to add the enormous surge in fertilizer prices, most of which are made from energy products, such as natural gas. Indeed, energy costs can constitute up to 90 percent of the costs of fertilizer production (for example, nitrogen fertilizers), which helps explain why fertilizer prices rose by double the amount of cereal prices from 2005 to 2008. Moreover, the bulky nature of grains means that agricultural prices are strongly influenced by transport costs. However, the significance of supply-side factors is not as strong as the demand-side factors, which are biofuels and import surge.

China, and to a lesser degree India, are demanding more oil and more commodities. China has contributed about 30 percent of the increased demand for oil from 2000 to 2006 and will continue to do so from 2007 to 2030 (Figure 2.5). Monthly import data in Figure 2.6 also suggest that rising oil imports in China could have contributed to rising oil prices, although the surge in oil prices is far more dramatic than the upward trend in Chinese imports. It is fair to be skeptical that Chinese demand for oil and metals could cause such a sudden upsurge in prices, given that China's demand for these commodities has been rising since the 1970s (Figure 3).

However, oil market experts argue that supply response is sufficiently slow that, even when rising demand is foreseen, the industry still struggles to respond. Moreover, China's economy was so flush with foreign exchange that it could afford to keep importing large volumes of oil even as prices rose, thus crowding other economies out of the market.

In general, Chinese demand looks like an important component in the surge in oil prices,

although previous analyses have also shown that rises in oil prices are also closely linked to political instability in the Middle East, Nigeria, and Venezuela and to supply decisions made by the Organization of Petroleum Exporting Countries (OPEC) (WRTG Economics 2008). As for India, its contribution to rising oil prices has thus far been fairly negligible, but its contribution will rise to 12 percent over the next 20 years or so.



Source: IEA (2007, table 1.2).

Note: 2006-30 data are based on the IEA (2007) projections.

Figure 6: contributions to changes in primary oil demand, 1980-2000, 2000-06 and 2006-30

The China–India hypothesis can largely be dismissed as a direct explanation for the price surge. However, this is not to say that economic growth in general was not a factor contributing to the crisis. Monthly trade data suggest that demand surges in recent years seem to be closely linked with international price movements. But these demand surges came from a diverse range of countries that do not include China or India. In addition, China’s contribution to the rising prices of oil and other nonfood commodities was indeed a significant, albeit not the sole, factor involved.

2.2 The Rebound of the price of food

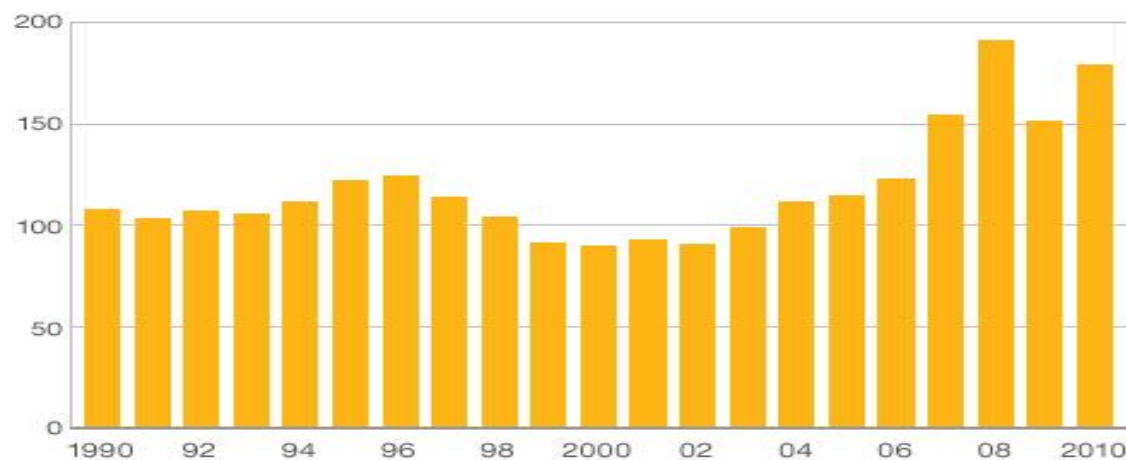
In 2008, the world witnessed a global food crisis. By March of that year, prices of food items were skyrocketing. Wheat saw a 130% price increase from a year earlier, soy was up 87%, and rice increased by 74%. The increase in the cost of food was mostly attributed to the rise in oil prices, droughts from previous years, a diminished stock of grain, and also the impact of the production of biofuels in developed nations (FAO, 2008).

In 2008 the President of the World Bank warned that 33 nations were at risk of riots, protest, and social unrest because of the rising food prices – and that is just what happened. People all around the world began protesting from Bangladesh to Burkina Faso, from Cameroon to Cote D'Ivoire, and from Haiti to India, Somalia, Yemen, and Egypt. What correlation can be observed between the high food prices in 2008 and the current price of food?

The United Nations Food and Agriculture Organization compile an index of food prices. It is currently at an all time high, above even the level it hit in the food price crisis of 2008.

Food prices since 1990

Food Price Index



Source: FAO

Figure 7: food prices since 1990

But the current situation is not the same as it was in 2007–08, the key reasons being: (a) there is still sufficient production and stocks of wheat, (b) oil prices are still not at the levels of 2008, (c) rice production is doing well and there are sufficient rice reserves, and (d) countries are not implementing policies that could put more pressure on prices – such as export bans in key exporting countries or a reduction of import tariffs in key importing countries.

Following the 2008 peaks, good harvests for most basic foods helped prices to fall back. But in 2010, severe weather in some of the world's biggest food exporting countries damaged supplies. That has helped to push food prices almost 20% higher than a year earlier, according to the FAO. (The 2010 figure was slightly below the annual measure for 2008 as a whole.) Flooding hit the planting season in Canada, and destroyed crops of wheat and sugar cane in Australia.

In addition, drought and fires devastated harvests of wheat and other grains in Russia and the surrounding region during the summer, prompting Russia to ban exports. As a result, wheat production is expected to be lower this year than in the last two years, according to US government estimates.



Figure 8: commodity prices over the last 12 months

The UN Food and Agricultural Organization (FAO) recently found that the Food Price Index was at 231 points in January 2011; this is up 3.4% from December. This number is higher than during the 2008 food crisis and the highest number yet since the FAO began monitoring the price of food beginning in 1990. Although the food prices are higher now than in 2008, this does not necessarily mean that there will be a global food crisis again. The price of oil is down from what it was in 2008 and there are also more reserves of grain today than there were two years ago.

Many countries are taking steps to try to minimize the effects of higher prices on their populations. Argentina, Bolivia, Cambodia, China, Egypt, Ethiopia, India, Indonesia, Kazakhstan, Mexico, Morocco, Russia, Thailand, Ukraine, Venezuela, and Vietnam are among those that have taken the easy option of restricting food exports, setting limits on food prices, or both. For example, China has banned rice and maize exports; India has banned milk powder exports; Bolivia has banned the export of soy oil to Chile, Colombia, Cuba, Ecuador, Peru, and Venezuela; and Ethiopia has banned exports of major cereals. Other countries are reducing

restrictions on imports: Morocco, for instance, cut tariffs on wheat imports from 130 percent to 2.5 percent; Nigeria cut its rice import tax from 100 percent to just 2.7 percent.

Price controls and changes in import and export policies may begin to address the problems of poor consumers who find that they can no longer afford an adequate diet for a healthy life. But some of these policies are likely to backfire by making the international market smaller and more volatile. Price controls reduce the price that farmers receive for their agricultural products and thus reduce farmers' incentives to produce more food. Any long-term strategy to stabilize food prices will need to include increased agricultural production, but price controls fail to send farmers a message that encourages them to produce more. In addition, by benefiting all consumers, even those who can afford higher food prices, price controls divert resources toward helping people who do not really need it. Export restrictions and import subsidies have harmful effects on trading partners dependent on imports and also give incorrect incentives to farmers by reducing their potential market size. These national agricultural trade policies undermine the benefits of global integration, as the rich countries' longstanding trade distortions with regard to developing countries are joined by developing countries' interventions against each other. The organization anticipates that world cereals stocks will shrink by seven percent, with barley declining 35 percent, maize by 12 percent and wheat by 10 percent.

2.3 What caused the current price inflation?

Countries faced a potential crisis depending on whether they had ample supplies or the financial capacity to import of countries. The experts agree that the weather has been an important factor. Cereal prices, especially that of wheat, started climbing in the second half of 2010 as severe drought and fires slashed production in Russia and Ukraine, two of the world's largest producers. The news drove up wheat prices in some countries by 45 percent, and even as much as 80 percent in others during the second half of 2010. Canada, another major wheat producer, was also hit by extremely bad weather, and an export ban imposed by Russia added further impetus. Headey cited the global financial crisis as another reason, which had "prompted a number of governments – particularly the US – to pump money into their economies and lower interest rates. Together with a very weak US dollar, these factors provide a macro-environment that is

conducive to higher commodity prices, including higher oil prices, which also impact food process through production and transport costs.” Headey and Waite (of the European Commission) added the diversion of food crops into biofuel production to the list.

“Another major factor has been speculation, highlighted by the doubling of the world wheat price in two weeks of August 2010, on the back of poor forecasts for the Ukraine and Russia,” Waite said. There was more weather-related bad news. FAO’s Global Price Monitor said wheat remained expensive in January 2011, as persistent rains and floods hampered exports from Australia, another top producer. Dry conditions in some wheat-growing areas of the US had also aided higher prices.

Will these higher prices continue? This seems to be the case. In their book, Headey and Fen looked at the food price projections prepared by the US Department of Agriculture, and jointly by FAO and the Organization for Economic Cooperation and Development (OECD), which predicted higher equilibrium prices – the outcome of usual supply and demand factors like population and economic growth, oil price trends and biofuel use – over the next 10 years. According to Heady, once equilibrium prices are already higher, there is a greater potential for short-run factors to induce tremendous short-run volatility, because markets are already tight.

The rich world is exacerbating these effects by supporting the production of biofuels. The International Monetary Fund estimates that corn ethanol production in the United States accounted for at least half the rise in world corn demand in each of the past three years. This elevated corn prices. Feed prices rose. So did prices of other crops — mainly soybeans — as farmers switched their fields to corn, according to the Agriculture Department. Over the long term, agricultural productivity must increase in the developing world. Mr. Zoellick suggested rich countries could help finance a “green revolution” to increase farm productivity and raise crop yields in Africa.

Chapter 3: Case Study of Selected African Countries and Measures Taken by Governments

3.1. Algeria

In the People's Democratic Republic of Algeria, 53 per cent of poor people live in rural areas and about 23 per cent of the population lives below the national poverty line. On average, poor rural households are larger than urban households and have a higher incidence of unemployment. Algeria is emerging from several years of internal conflict that have deepened poverty and unemployment in rural areas and have contributed to deterioration of the natural resource base. Rural poverty is closely related to lack of income and employment, to the large size of most households and to low standards of education.

It is a result of the continuing constraints facing the agricultural sector, such as soil erosion and degradation, increasing salinity, the poor state of repair of irrigation and drainage networks, excessive tapping of groundwater and persistent droughts. Because of past agricultural policies, minimal production technologies and support services, and widespread unemployment, rural people do not have the income they need to rise above the poverty line. They have limited access to financial services that allow them to procure equipment and obtain working capital.

Following the recent riots the Algerian cabinet agreed on last week to lower the custom duties and taxes on sugar and other food stuffs by 41% as a temporary act to cut prices. But the measure, which will last through the end of August, did not end days of conflict in the streets between angry youth and security services. With oil prices soaring, Algeria can afford to spend more on more on subsidies to placate the rioters.

3.2. Ethiopia

In Ethiopia, the food inflation rates (end of period) portray a general trend of increasing food prices over the years 2004 to 2008, reaching all-time high levels in 2008. At the national level, the inflation rate steadily increased from a mere 3.4 percent in 2004 to 13.6 percent in 2006 and

rose further to 34.9 percent by June 2008. According to the Ethiopian Central Statistical Agency (2008), the rise in the food inflation rate over the period of June 2007 to June 2008 was due to the rise in the prices of “cereals, pulses, meat, oils and fats, milk and eggs, vegetables and fruits, spices (especially whole pepper and chili), potatoes and other tubers and stems, other food items, and food taken away from home.”

Although the Ethiopian food price index seems to share the same increasing trend as the world price index, it is obvious from Figure 2 that since August 2004 the Ethiopian food price index has been consistently higher than the world index. This suggests the existence of significant local causes of the food price surge in Ethiopia, especially the severe drought shock of 2002–2003. The world oil price seems to play a major role in the food price hike in Ethiopia. Even so, when the world oil price dropped below US\$70 per barrel between September 2006 and June 2007, the Ethiopian food price index was still rising.

Food prices in 2008 were high despite a good harvest and adequate cereal availability relative to utilization. Food inflation accounted for 56 percent of the total inflation, which was as high as 40 percent. However, high global food prices are not the main factor contributing to food inflation in Ethiopia. The primary causes for high food prices in Ethiopia are market distortions, increased demand for food from urban population, and overall economic growth. Climatic factors such as poor rains and trans-border animal diseases in pastoral areas have also contributed to worsening food security in these areas (WFP 2008).

It might be that inadequate infrastructure and undeveloped food markets in Ethiopia restrict trade between surplus and deficit grain-producing regions, explaining regional heterogeneity in prices (World Bank 2007). A study by the European Commission Delegation to Ethiopia (2007) reports that in maize surplus areas of southwestern Ethiopia, average maize price increased by 38.8 percent, from Birr (Ethiopian currency) 116.00 in March 2007 to Birr 161.00 in July 2007 due to early depletion of stocks following soaring prices of other grains. At the same time, in deficit areas of eastern and central Ethiopia that procure maize from surplus areas of southern and southwestern Ethiopia, a 25.8 percent price increase was reported from March to July 2007. Overall, it is suggested that an increase in income induces an increase in the demand for all food

items across regions. Hence, across regions, all goods can be classified as normal goods meaning that their demands increase with income. All regions in Ethiopia have experienced a drastic rise in food inflation since 2004. According to an IFPRI study* none of the Ethiopian regional maize markets had a long-term connection to the world market, nor could establish evidence of market integration among regional markets. However, there is significant short-term price effect between the world maize market and some Ethiopian regional markets. In addition of enhancement of inter-regional market integration, effective policy responses should account for geographic heterogeneity in household consumption behavior.

The hike in food prices in Ethiopia reflects relatively high inflation in Ethiopia (up to 40% in 2009). There is also quite some regional differentiation: the local Ethiopian maize markets are not well integrated in the world market and interregional trade is restricted by inadequate infrastructure and high transaction costs. In the period March-October 2008, Ethiopian maize prices almost tripled from USD300 to 900 per tonne. As a response to the high food prices, the Government has resumed the availability of subsidized food commodities in urban areas. Major cereal exports have been banned. Several productive safety net programs and nutrition interventions have been introduced (WFP 2008, FAO GIEWS 2009). The government reacted in several ways: with export bans on cereals in the beginning of 2008, measures to deal with illegal practices of traders, large food imports for the urban poor and elimination of fuel subsidies to save money for food consumption subsidies. All these efforts to bring down prices have been very costly and the government has been forced to implement measures to decrease its budget deficit.

East Africa

The effects of high cereals prices on the food security situation in East Africa have been shaped by two main factors: the climatic conditions in each country and the diverse government responses to the high cereal prices. Although there are several regional trade agreements in the region, which, in principle, stimulate regional trade, there are still various obstacles to interregional trade and markets in the four countries are little connected. This explains the large differences between the domestic maize prices in the four countries.

Current situation: Staple food prices in most reference markets remained stable or slightly increased from November to December. Good sorghum harvests in production zones in Northern Sudan have brought about a healthy supply on most markets in both Northern and Southern Sudan, though increasing demand in some markets in Southern Sudan, due to a large number of returnees from Northern Sudan, may be driving localized price increases. The Darfur region had a bumper millet harvest, and prices of this primary staple are less than half of what they were in June and July 2010. Wheat prices in both Northern and Southern Sudan increased in December, reflecting a poor wheat harvest in Northern Sudan and higher wheat prices in international markets. Wheat prices also rose in Addis Ababa, Ethiopia. Markets in Djibouti such as Dikhil and Obock also saw rising cereal prices attributed to increasing import costs for wheat flour, sorghum flour, and belem rice.

In Burundi, sweet potato prices have continued to increase in most reference markets. Demand for sweet potatoes has increased as it is a substitute for cassava, and the cassava crop was poor this year due to the cassava mosaic disease and dryness from La Niña. The delayed start of the rainy season may eventually cause further price increases. Failed short-rains crops have led to increased prices for key staples in some parts of the Horn of Africa. Prices for sorghum in Baidoa and Qorioley, Somalia, increased significantly, and white maize continued to rise in price in Qorioley.

Outlook: In Kenya, increased demand for maize from the government for relief interventions and restocking of strategic reserves in the coming months may cause prices to edge up. In Tanzania, a poor harvest in vuli bimodal areas may lead to low availability in the market. Prices in northern Kenya, southeastern Ethiopia, and Somalia are likely to continue to increase due to an on-going drought and poor price transmission from surplus areas resulting from poor infrastructure and small markets in these areas. However, on-going response measures may stabilize prices in areas other than Southern Somalia where insecurity may lead to further price spikes. Were disruptions of trade flows from Northern Sudan or from neighboring countries into Southern Sudan to occur, prices for grains such as sorghum and maize would rise.

3.3. Côte d'Ivoire

After recovering from a political crisis that began in 2002 and accelerated the deterioration of the humanitarian situation, Côte d'Ivoire faces increased challenges. The 2008 global food and fuel price increases have had a negative impact on food security and nutrition. Many households are food insecure and malnutrition rates have reached nearly 20 percent in some parts of Côte d'Ivoire. Côte d'Ivoire's capital Abidjan saw severe food riots that gripped the city. The riots followed dramatic hikes in the price of food and fuel, with the price of beef rising from US\$1.68 to \$2.16 per kilogram, and the price of gasoline rising from \$1.44 to \$2.04 per liter, in only three days. According to UN OCHA Côte d'Ivoire faces a gradual deterioration in national food security. Cote d'Ivoire ranks 166 of 177 countries on the Human Development Index in 2007/2008. There are more than 700,000 IDPs and vulnerable groups in the west of the country while populations in the north are becoming increasingly impoverished.

Some 20 percent of rural families in Côte d'Ivoire are faced with food insecurity directly due to the rise in food prices. Rice is the main staple in the country, as in much of West Africa, but the country only produces 700,000 tonnes while it has to import 800,000 tonnes to meet consumption rates. In April, prices for imported rice were up to 52 percent higher than in September 2007. Maize, another main staple produced in the more arid northern and eastern regions, has also increased in price: by 75 percent in early 2008 compared with prices in July. In Cote d'Ivoire, the initial promise holding the presidential election in 2009 following the signing of the Ouagadougou Agreement, and the improved security situation succeeded in restoring the confidence of private stakeholders in the prospects of the Ivorian economy. Growth, which remained virtually stagnant at 0.1% over the period from 2000 to 2008, rose to 3.7% in 2009, driven by oil and mineral production, and by an incipient recovery in the service sector.

West Africa

Current situation: Nominal prices of local cereals such as millet have been falling since last September due to very good prospects for and a normal progress of the harvest. An above normal millet harvest and ample availability in eastern Chad, like in neighboring Darfur region in Sudan, have been bringing millet prices down, with the price of millet in Abéché being 40 percent below

the price last year. In general, grain prices in Chad continued to fall between November and December as newly harvested grains reached markets, though sorghum prices did increase in December in some markets. However, in all other trade basins, the price of millet and sorghum has begun to rise again despite the excellent harvests of this season. Several factors could account for this rise including the rebuilding of institutional stocks and traders stocks. Although prices are moving up, they generally remain lower than last year. For cowpea, whereas prices have been stable and near the five-year average in the vicinity of production areas in Niger and Nigeria, prices have remained high or risen further in consumption markets such as Dapaong and Kara in Togo, where prices in December were 57 percent and 30 percent above last year's prices, respectively. Higher prices in coastal consumer markets may be due to traders still trying to sell stocks from previous years and not having access yet to new stocks from the most recent harvest.

Outlook: Course grain prices are expected to begin or to continue to increase according to seasonal norms throughout the region. Meanwhile, active processing of local paddy rice in the production areas of the region will lead to increased availability in markets in the valley of Senegal, in Volta and Tamale regions in Ghana, and in riparian Mali. Asian exporters are also well supplied and in the process of restocking, then they may try to increase their sales in the region. For this reason, the price of rice should be relatively stable, though areas with high transportation costs may experience price spikes related to the cost of fuel. Further increases in international commodity prices such as for wheat and for vegetable oil may drive up these prices, especially in urban centers such as Nouakchott, Mauritania. Recent developments confirm that these structural constraints are due, on the supply-side, to low productivity in the primary sector, which is mainly dominated by subsistence agriculture, the mainstay of the majority of the population, and highly dependent on rainfall patterns. The strengthening of the fundamentals of the West African economies demands, first and foremost, a higher prioritization of the rural sector, with a special focus on water management. It is an established fact that the heavy dependence of agricultural production on rainfall is one of the major reasons for the low performance of this sector, and consequently, of all the economies concerned. Adequate rainfall generally means increased agricultural production, with the attendant benefits for food security, agricultural incomes, inflation and supply to processing plants. Poor rainfall has the reverse effect.

Countries need to invest much more in the construction of irrigation systems in order to enable the primary sector to fulfill its role as the engine for growth, due to its undeniable multiplier effects. In this regard, the case of Burkina Faso, which developed irrigated perimeters around farming areas in order to enable its rural population to boost production and increase the frequency of their harvests, thereby boosting their income, and contributing to food security at the national level, is an example of good practices, worthy of emulation. A higher prioritization of agriculture must also include the rehabilitation and strengthening of agricultural extension services which have endured long periods of neglect due to the financial constraints of the States, particularly during the structural adjustment phase. The introduction of incentives to encourage the development of industrial farming should also constitute an important aspect of agricultural policy, which will enable the primary sector to fulfill its role in the development of the West African sub-region.

However, upward movements in food prices, especially cereals, bring immense challenges to the sub region as they impact on access to food by the majority. For example, the region does not produce enough rice and relies on imports, higher prices impact on food security. Although the projection is that the prices of food commodities will increase marginally, the resultant food security challenges require a regional strategy.

3.4. Mozambique

Mozambique has made tremendous strides in reducing poverty over the past 14 years, following the conclusion of the civil war in 1994. The dramatic increases in world food and fuel prices during 2007 and early 2008 have put at risk Mozambique's considerable advances in poverty reduction during the past decade. Household survey data indicate that the national poverty headcount fell from 69 to 54 percent during 1997–2003. Reduction in rural poverty has been even more pronounced, although the proportion of people who are poor in these areas remains higher than in urban centers. Given these trends, and with the country still growing rapidly, it is expected that the next household survey due in 2009 will confirm that poverty has continued falling. However, the recent dramatic increases in world agricultural and fuel prices may undermine at least some of the expected gains.

Despite a relatively steady transition, the country has been affected by high global food prices. In 2008, maize prices were 66 – 83 percent higher than their last year averages in different regions. The poor and urban households in the southern region of Mozambique are most vulnerable (WFP 2008). The country continues to remain one of the global hunger hotspots and has a global hunger index of 26.33 or alarming (a compilation of population undernourishment, child malnutrition, and child mortality). The causes of high food prices in the country are internal and seasonal. Extreme climactic conditions, such as frequent droughts and floods are significant factors contributing to the surge in food prices, especially in the southern region. Other factors include high fuel cost, increased demand for maize, and reduction of government grain reserves. However, moving forward in 2009, the prices are expected to decline following a normal agricultural season (WFP 2008).

In response to the crisis, the government signed an agreement in 2008 with Vietnam to import 40,000 tonnes of rice every year for the next three years (WFP 2009). Mozambique has been rapidly expanding its biofuels capabilities and plans since Brazil and Mozambique signed a cooperation agreement for sharing resources in biofuels production and training. Higher world food and fuel prices represent a negative terms-of-trade shock for Mozambique, since the country imports almost all of its fuel and is a net importer of food. However, the poverty impact of higher prices depends on a range of factors, including: (i) the structure of production and consumption at the household level; (ii) the extent of the agricultural supply response; (iii) the extent of export response; and (iv) the fuel intensity of the economy.

On the one hand, higher agricultural prices may represent an opportunity to raise rural incomes, since about 80 percent of the labor force derives their livelihoods from agriculture and related activities. Conversely, many households rely on purchased food, particularly in urban areas, and so may be adversely affected by rising food prices. Moreover, higher fuel prices will also affect poverty due to fuel's economy wide linkages, especially to Mozambique's burgeoning processing sectors. Finally, macroeconomic adjustments and public policy responses to accommodate the terms-of-trade shock will also affect household incomes.

Southern Africa

Current situation: With the lean season well established, regional staple food price trends have remained mixed with steady price increases in most markets. These trends have been largely determined by local market conditions, although the supply of staple foods at the national and regional levels has also played a role. For example, most markets in Tanzania, Zambia, and Mozambique (all reported to be well supplied) have recorded maize price increases despite satisfactory national-level supplies, indicating the larger influence of local demand and supply conditions on more isolated markets. These trends are in line with the increasing dependence of households on markets as the lean season progresses. For example, in Choma, Zambia, the white maize price increased 13 percent which would be expected given the seasonal price patterns for white maize. In the vast majority of markets, though, prices, especially for maize, are lower than last year. An exception to the usual seasonal trends is the area encompassing central and northern Malawi, where maize prices dropped between November and December, which is indicative of ample supplies. Similarly, informal cross-border trade of maize, rice, and beans throughout the region was much less than normal in October – November early in the lean season, reflecting adequate availability in local markets due to good production this year.

Outlook: Overall, the increase in staple food prices in most local markets is expected to continue according to seasonal trends and prices will reach their highest point between January and February, the peak of the lean season, after which they will start to decline in response to increasing food availability from green harvests in March and April. Apart from Tanzania, rainfall performance so far has been good, and good production prospects will help contain potential upward pressure on prices. Only in flood-affected areas where green harvests may be delayed or compromised and in the bimodal areas of Tanzania where the vuli season failed prices may keep increasing after the end of the normal lean season. Nonetheless, food supplies on local markets are expected to remain adequate through the end of the rainy season as traders continue to ply their trade in response to increasing demand, especially on markets in deficit areas. Maize and wheat prices on South Africa Futures Exchange are expected to move upwards as they closely track trends in international export markets. Also, in general, prices are expected to trend upwards, in line with usual seasonal price patterns. Nonetheless, favorable rainfall forecast and performance thus far are likely to exert a strong influence on local prices, with speculations of an expansion of planted areas driving prices downwards.

Chapter 4: What are the implications for Africa?

4.1. A great opportunity to African untapped potential

Based on Malawian president Bingu wa Mutharika's plan, Africa should be in a better position to achieve food self-sufficiency in five years. The record prices of grains in 2008 made investment in agriculture an attractive proposition for countries exporting as well as importing food. The African Union (AU), with its mix of producers and buyers, has been steadily gearing up for self-sufficiency. Shortly after Mutharika became AU chair in 2010, he announced a plan to make Africa food secure in the next five years.

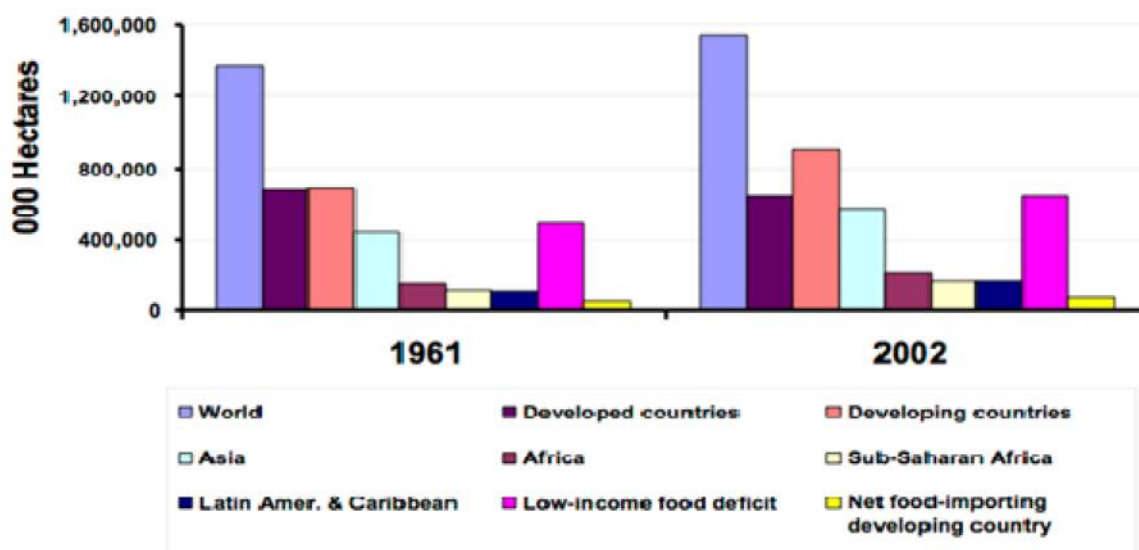
Martin Bwalya, head of the Comprehensive Africa Agriculture Development Program (CAADP) said the AU's seven-year roadmap to put the spotlight on farming so as to promote food security and economic growth, and reduce poverty, had been set in motion five years ago. By the end of 2010, the agriculture development plans of 18 African countries had undergone a rigorous independent technical review and were being rolled out. Over 60 percent of Africa's people live in rural areas and most depend on farming for food and income. Agriculture contributes between 20 percent and 60 percent of the gross domestic product (GDP) to national coffers.

In a document called The African Food Basket, Mutharika spelt out the details of his plan, which requires countries to allocate a substantial portion of their budget to agriculture, provide farming input subsidies, and make available affordable information and communications technology. This would be possible with the help of a new strategic partnership between countries, donors, aid agencies and the private sector. CAADP, initiated in 2003, covers all the main aspects of Mutharika's plan, including the commitment to devote at least 10 percent of their budgets to agriculture.

Under the program, countries draw up comprehensive investment plans that include the four CAADP pillars: sustainable land and water management; improved market access and integration; increased food supplies and reduced hunger; and research, technology generation

and dissemination. “We expect the countries to contribute at least 10 percent of the annual expenditure budget demonstrating local ownership and responsibility...” said Bwalya. He added while development aid financing remained important, it was also crucial that countries consider measures to attract direct private sector financing to agriculture. Uganda, one of the 18 states to undergo the review process, has accounted for about 65 percent of its funding requirements from its own budget.

The AU’s development agency, the New Economic Partnership for Africa’s Development (NEPAD), which runs CAADP, helps countries to mobilize funds. Carefully managed subsidies, run for a short term, and aimed at strengthening existing markets and agricultural infrastructure, were a lot more effective.



Source: FAOSTAT 2005.

Chart 9: Total arable land in crops for selected country groups 1961 and 2002

Regional integration

A more realistic option, according to Ousmane Badiane, director for Africa at the US-based International Food Policy Research Institute (IFPRI), would be for countries with the potential to improve food production to produce enough to feed their less productive neighbors.

This called for expanding regional trade and investment in transportation, including ports, railways and highways linking countries. AU members have begun to take regional economic integration “seriously”, noted Calestous Juma, professor of international development at Harvard University in his recently released book, *The New Harvest*. He lists regional markets as one of the three opportunities that could fortify Africa’s food security against the rising threat of climate change. There are at least eight Regional Economic Communities (RECs), such as the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC) “that are recognized by the AU as building blocks for pan-African economic integration”.

However, “regional cooperation in agriculture is in its infancy and major challenges lie ahead.” Regions could become food secure “by capitalizing on the different growing seasons in different countries and making products available in all areas for longer periods of time”, he wrote. Both Mutharika and CAADP emphasize the development of regional markets. Mutharika listed 12 regional trade corridors identified by the various RECs and suggested the AU draw up an institutional framework for each corridor.

Science and technology

In his book Juma lists advances in science and technology as another factor that could propel Africa towards food self-sufficiency, and called for more investment in the creation of regional hubs of research and innovation.

Subsidies

Underuse of fertilizers has often been cited as a major cause of low production in Africa. Only four countries – Egypt, Malawi, Mauritius and South Africa – have exceeded the 50 kg per hectare target set by the AU, Mutharika noted in his plan. Fertilizer use in Africa accounts for less than 10 percent of the world average of 100 kg per hectare, “Just five countries (Ethiopia, Kenya, South Africa, Zimbabwe, and Nigeria) account for about two-thirds of the fertilizer applied in Africa,” Juma said. Mutharika, who promoted the provision of subsidized fertilizer in Malawi, makes a strong case for this approach.

At present 19 African countries are implementing various programs providing fertilizer. Juma sees leaders like Mutharika, who has prioritized food security as the third factor that could set Africa on the path to food security. The Malawian government devotes 16 percent of its national budget to agriculture.

The Way forward

The AU's plans for agriculture also tackle other major issues affecting food security, such as irrigation (only four percent of Africa's crop area is irrigated, compared to 39 percent in South Asia); improving soil fertility (more than three percent of agricultural GDP in Africa is lost annually as a direct result of soil and nutrient loss); post-harvest storage loss (sub-Saharan Africa loses about 40 percent of its harvest per year, against one percent in Europe); setting up databanks to share early warning information and energy. There is a high level of engagement between countries on agriculture. "They meet regularly and we support them in building evidence-based information," CAADP's Bwalya noted. If they stayed the course in implementing CAADP, Badiane said in five years a large number of African countries, if not food secure, would be in a much better position to feed themselves.

The 2008 soaring international food prices has brought attention to the major weaknesses of some African countries, in particular those strongly relying on food imports, and highlighted the vulnerability of agricultural activities that are still represented in many countries by small subsistence farming noted for low productivity and lack of competitiveness. It explains that, taking advantage of low sea shipping costs and available financing due to low interest rates and wealthy countries' subsidies for their food surplus, African nations, going from an administrative and interventionist vision to a total absence of vision for agriculture, very often opted to import food products rather than produce locally.

Yet, if Africa still remains the world's only region that is a net importer of food products, the continent has sufficient resources (in manpower, land and water) to produce enough food to feed the whole African population. That is the reason why the recent food crisis might represent an opportunity for countries that were badly affected to finally become aware of the urgency to return agriculture to the heart of their economic development.

To overcome these hurdles, African nations must devise coherent public strategies and policies to significantly boost agricultural production, while curbing the deterioration of natural resources. With a view toward increased foreign aid for agriculture, they must achieve the most effective management of these funds, since the issue currently deals with gaining the best possible synergy between the supply of public goods and private, national and international investment.

Such action presupposes that governments implement new public policies based on fine-tuned negotiations in various areas, such as land regulations, agronomic research, availability of credit, tariff protection, mechanisms to fight price volatility and manage risks, reinforcement of agricultural organizations (development of cooperative farming that was until now seldom promoted by countries), creation of regional markets, training, etc... It also presupposes tackling the bottlenecks caused by infrastructures, logistical operations and lack of regional integration, the competitiveness factors including energy, shortage of financial services providers and transformers, as well as the scarcity of long-term financing in local currencies.

The increase in food prices creates an opportunity for the global community to refocus on investments in agriculture and social protection. The structural shift in food prices creates an opportunity for the Bank and other donors to work with partner countries to build the political coalitions and mobilize the necessary financial support to reverse a perennial problem of under-investment in agriculture and to build better safety nets to help the poor cope with their endemic high levels of risk.

4.2. A serious threat

Africa may be able to feed just 25% of its population by 2025 if soil degradation on the continent continues at its current pace, according to a water expert forecast at a United Nations University (UNU) conference on desertification in Algiers, Algeria. Karl Harmsen, Director of UNU's Ghana-based Institute for Natural Resources in Africa, says that should soil conditions continue to decline in Africa, nearly 75% of the continent could come to rely on some sort of food aid by 2025.

PROJECTED CHANGES IN AGRICULTURAL PRODUCTIVITY BY 2080 AS A RESULT OF CLIMATE CHANGE
(Percentage change, taking into account a 15 per cent carbon fertilization effect)



Source: Cline (2007); and Yohe (2007).

Map 1: Projected changes in agricultural productivity by 2080 due climate change

This impact of global warming has significant consequences for agricultural production and trade of developing countries as well as an increased risk of hunger. Preliminary estimates for the period up to 2080 suggest a decline of some 15–30 per cent of agricultural productivity in the most climate change exposed developing country regions – Africa and South Asia (see figure). For some countries in these regions, total agricultural production could decline by up to 50 per cent. The poorest farmers with little safeguards against climate calamities often live in areas prone to natural disasters.

More frequent extreme events will create both a humanitarian and a food crisis (FAO, 2009a). Agricultural trade patterns are also likely to change. Despite all prevailing uncertainties, one can say that the agricultural production potential in temperate zones of North America, Europe and Asia is likely to increase, benefiting from higher mean temperatures and longer growing seasons, whereas agricultural productivity in the other regions, where most of the developing countries are, is expected to decline.

As a result, exports from the former are likely to increase, whereas non-temperate-zone regions will need to import more (total net cereal import volume of developing countries, for instance, could increase by some 45–50 per cent in 2050 relative to the year 2000). Some experts argue that this import dependence will likely be exacerbated by increases in agricultural prices, which could rise by up to 20 per cent in the short to medium term. Taken together; this might imply a more than 50 per cent increase in the net cereals' import bill of developing countries.

Over the long term, agricultural productivity must increase in the developing world. Mr. Zoellick suggested rich countries could help finance a “green revolution” to increase farm productivity and raise crop yields in Africa. Unfortunately industrial nations are not generous. Aid by rich countries fell by 8.4 percent from 2006 level. Developed nations would have to increase their aid budgets by 35 percent over the next three years just to meet the commitments they made in 2005. Continued growth of the middle class in China and India, the push for renewable fuels and anticipated damage to agricultural production caused by climate change mean that food prices are likely to stay high. Millions of people, mainly in developing countries, could need aid to avoid malnutrition.

As a general proposition, the impact on poverty generated by an increase in the price of food will depend on:

- i. the relative importance of different food commodities in the production set and consumption basket of different households and the difference between the two;
- ii. The magnitude of the relative price change;
- iii. Households' ability to substitute between food items; and,
- iv. The degree to which households are compensated for the price shocks by changes in their income (i.e., by the indirect effect on wages and employment).

Evidence suggests that the poor spend between 50 and 70 percent of their income on food on average, the proportion of poor people who are net buyers of food tends to dominate over the share of net sellers, the increase in domestic food price—though much lower than that observed for international prices-- has been significant, although households do substitute more expensive for less expensive food in the case of basic staples this substitution is limited, and the positive effects on wages take time.

The existing safety net systems in developing countries leave much to be desired. In too many countries it is either inexistent or small; and, even in countries in which cash transfer programs are large and effective in addressing chronic poverty, they are not designed to respond to shocks. This means that the majority of the poor who have been hurt or those who have become poor as a result of higher food prices were not being protected from the impact of higher food prices on their living standards. In cases in which these programs were expanded, this was done as an *ad hoc* measure implemented many months (or even years) after food price increases appeared on the scene. In addition, low-income countries in particular may not have the fiscal space to finance an expansion let alone launch new safety net programs. There is no available data in the public domain as to how many countries may be in such position.

Conclusion

It is now widely accepted that rising food price has been a major factor in sparking the turmoil in Africa and the Middle East in 2008 and recently. According to the UN, the global price of food hit a new all-time high earlier this year, and the agency is expecting the price of food to continue to go up throughout the rest of this year. A recent study published by the U.S. think tank, the Carnegie Endowment for International Peace (CEIP), show that a new food crisis may possibly emerge in 2011. A combination of several factors: difficult climatic conditions such as the recent drought in Russia which drove wheat prices up, economic recovery which boosts demands in energy, particularly for oil and biofuels and significant volatility in exchange rates, particularly in dollars. The global food crisis is not over. International food prices remain high despite their collapse from their 2008 peaks. Aggravating the food security problem of the poor, staple food prices in developing countries have actually continued to increase in recent months. Many of the structural factors that drove prices up during the food crisis are still at play and could lead to another spike in the near future. The continued increase in the use of corn for biofuels production and the likelihood of higher oil prices with recovery point to further price increases; exchange rate volatility adds to the risks. Advanced countries need to review their policies toward biofuels production, which is proving disastrous for the poor.

Developing countries can undertake reforms that improve the problem. Despite various policy measures, the domestic prices of staple foods in many developing countries remain high and have even seen large increases recently. Devalued national currencies, reduced harvests due to bad weather, and civil conflicts contributed to these increases. Out of the twenty developing countries with the largest poor populations, average domestic staple food prices in twelve were higher in 2009 than in 2008. Over that period, domestic prices rose most dramatically in Mozambique, where the price of cassava increased by 47 percent. The Philippines, Kenya, and Zambia saw prices increase between 20 percent and 26 percent from 2008 to 2009. Of the eight countries in which 2009 prices were lower than 2008 prices, the 2009 prices were still much higher than 2007 prices in five of them.

According to the Food and Agriculture Organization (FAO), the global crisis pushed an additional 100 million people into hunger in 2009; the World Bank estimates that 50 million additional people were living under \$1.25 a day in 2009 as a result of the crisis. The crisis also negatively affected government budgets and social assistance programs. A resurgence of many of the major factors that drove prices up two years ago—the diversion of food commodities into biofuels, rising energy prices, and adverse exchange rate shifts—on top of bad weather conditions could lead to another spike in food prices in the near-term. In the 2009/2010 crop year, approximately one third of U.S. corn will go to biofuels production, about three times the 2002–2005 average. The continued increase in the use of corn for biofuels production in the United States will have implications for international corn prices as the United States accounts for about a third of global corn production and two-thirds of global exports. A resurgence of many of the factors that drove prices up two years ago could lead to rise in food prices in the near-term.

Advanced countries need to reassess policies that promote biofuels production, which is economically inefficient, adds to carbon emissions, and is proving disastrous for poor countries. While developing countries can do little to change the agricultural policy of advanced countries, they can lower the burden on the poor by improving their infrastructure, institutions, and domestic policies. Successful implementation of the latter will depend in part on improvements in the former, as well as increased aid from international development agencies. Transport

infrastructure is very essential in managing food prices in developing countries. Strengthening transport links can mitigate price rises by decreasing the cost of domestic distribution by helping domestic food supply flow from surplus to deficit areas.

Good institutional arrangements that ensure domestic production and distribution will help minimize exposure to price volatility as well, particularly in those countries that meet a large portion of their food requirements through domestic production. Properly regulated commodity exchanges can play a role by filling the institutional gap. Liberalizing trade will also help improve food security. Some major food-importing countries have already lowered tariffs on food imports in an effort to reduce the burden on the poor. However, market imperfections—such as weak transportation and distribution infrastructure that isolates local people and hinders lower tariffs from translating into lower prices in local markets—must be addressed.

Effective state intervention for food price stability and food security requires fiscal resources, yet attention to agriculture has declined in the past few decades. The World Bank's lending to agriculture declined from about 30 percent of total annual lending in 1980 to 12 percent in 2007. Only 4 percent of overall Official Development Assistance is now going to agriculture. International development agencies can play a significant role in limiting future food crises by making agriculture a greater priority, improving lending for agriculture in developing countries, and supporting safety nets and cash transfer programs.

Higher grain prices can stimulate a medium-term supply response by reversing a generally declining trend in government, private sector and donor investment in the agricultural sector. Agricultural producers such as Brazil, Malaysia and Thailand have made significant progress in agricultural commercialization in recent years, and have increasingly undertaken investments in research and extension necessary to promote increased agricultural productivity and reduced agricultural risk. However, some of the short-run policy options that seek to control markets through mandated grain prices; export restrictions, forcible procurement, or direct government involvement in marketing activities may limit the reach for longer-term solutions and are likely to lower the food supply response over the medium term. In contrast, alternative measures such as the piloting of market-based risk management tools in Malawi, and the improvement of

publicly accessible market information systems in India and Mali, are all likely to mobilize significant new resources in the private sector to cut marketing costs and improve efficiency of grain markets over the medium term.

For many low-income countries, transport and logistics costs are a key component of food prices and are generally far higher than OECD benchmarks of around 9 percent. While countries can do little to reduce ocean shipping costs (which holds a considerable part of the final price for high volume, relatively low value goods such as grains and edible oils), they can act to lower the overall cost of domestic distribution. The importance of strengthening inland transport links in mitigating price spikes was recently underscored in Congo Republic. Improvements in transport capacity stemmed the rise in food price inflation that was experienced in 2006, and further investments in transport links with Brazzaville are expected to be an important part of controlling price increases. In order to achieve long-term agricultural growth, African nations should increase their investments in agricultural research and extension, rural infrastructure, and market access for small farmers. Rural investments have been greatly neglected in recent decades, and now is the time to reverse this trend.

Agriculture as an engine of African development

The past trend of substitution of agriculture to industrial development and the service industry cannot continue. Agriculture is central to the development of poor countries, particularly Africa, mainly because farmers are by far the majority, but also because it would be wrong to forget that that the development of agriculture is a precondition of the economic growth of a nation. No country in the world has developed without the support of competitive agriculture except the oil economies. And with 65% of the working population and over 30% of GDP, Agriculture is indisputably the present and future of Africa.

Since the early 1970s, there has been a relative decline in African agriculture while Asia undergone an impressive green revolution. The drop of Africa's share in global agricultural and food trade (from 10% to 4% between 1960 and 2005) and the resulted in a greater dependence on food imports. The explanations given by several studies are: the decline in aid policies for

agricultural development (fell by 10% to 4% from 1990 to 2005), particularly because of the World Bank; the negative effects of the Structural Adjustment Programs of the IMF, with a huge drop in customs duties and the removal, though slight, of support policies for agricultural sectors; export crop dependency on global prices, which demonstrate a long-term downward trend; and the effects of the lack of a transport infrastructure, as well the conflicts that plagued the continent. Even with this decline Africa's food and agricultural trade balance is still positive, with \$ 14 billion in exports compared to \$ 10 billion in imports. Some estimates point that Africa will have to boost its food production 5 fold by 2050 to cope with population growth. To achieve this, it will have to protect its markets from more competitive markets.

Developed countries should utilize this opportunity to eliminate agricultural trade barriers. This issue has been politically difficult for developed nation's policymakers to address, but the political risks may now be lower than in the past. A level playing field will make it more profitable for them to ramp up production in response to higher prices. The new global condition of higher prices in raw materials and the development of numerous bilateral trade negotiations due to the Doha Round deadlock, must direct African countries into setting an aggressive agricultural policy. This new African agricultural policy which is developing with initiatives for the Maputo Summit of the African Union (AU) in 2003, the drive of the Economic and Monetary Union of West Africa (UEMOA) in 2001 and the Agricultural Policy of the Economic Community of West African States (ECOWAS) in 2005, emphasize priority must be given to subsistence food farming or for export to other African countries through the consolidation of regional markets.

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